

Chemotaxis movement assay of *Eurycoma longifolia* using wild and disarmed strains of *Agrobacterium rhizogenes*

ABSTRACT

Bacterial chemotaxis is considered the first step in the interaction between motile bacteria and plant cells. Chemotaxis initiates the process of bacterial infection towards the plant cells and thus conferring beneficial attributes to the host. In this study, 5 wild strains and 2 disarmed strains of *Agrobacterium rhizogenes* were tested for chemotaxis assay using the swarm agar plate method. As expected, strong positive chemotactic response was observed in most of the tested bacteria strains and all the tested strains of *Agrobacterium rhizogenes* showed positive chemotactic response towards the tested root and somatic embryos of the valuable medicinal plant, *Eurycoma longifolia*. Therefore, induction of hairy roots is possible in *Eurycoma longifolia*. Generating hairy roots in *Eurycoma longifolia* will be highly beneficial mainly to the pharmaceutical industry as this medicinal plant possesses the capacity to produce many secondary metabolites which is proposed to increase sexual virility properties and to have anti cancer properties.

Keyword: *Eurycoma longifolia*; Chemotactic movement; *Agrobacterium rhizogenes*; Roots; Somatic embryos